## Looking for New Revenues? It's a Great Big World Out There

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There I was, deep in the Masai country of Northeast Tanzania, and I was surprised by what I was seeing....

OK. We will get back to that story in a minute.

It is no secret that demand growth in the U.S. is slowing and in some places demand is not really growing at all. This is part of the new world, with the previous world being one where a continuously rising electricity demand from customers made a lot of aspects of the electricity business a bit easier than it is now. This slackening growth in demand is leading to concerns from utilities as to what it means to their business, including their basic business model. It also will likely mean increasing competition at some point between and among some of the new entrants to our sector, say maybe demand response and storage.

Getting back to my story...there I was in a remote Masai town on market day with my family and a couple thousand local people who flooded in from the surrounding hills and valleys. The men each had two things: a spear and a wooden cattle stick. Many of them had another thing: a cell phone.

A lot of you are probably aware of how mobile phones have taken places like Africa by storm, seemingly overnight. They have not only created access to information, like market info on agricultural market and prices, but also have literally created a banking and payment system for people who previously had none whatsoever.

Technology swooped in and carried the day. But of course it didn't have to replace any technology that was already there. There was a vacuum, unlike in the U.S.

But there is an additional kind of vacuum in the developing world - there is not enough electricity, and therefore not enough of the technologies that can exist when it is available. The term of art being used for this issue by national and state governments, multi-national finance institutions, NGOs and utility/cleantech companies is energy access.

The numbers are staggering in terms of the number of people in developing countries who do not have access to electricity. And they want it, whether they get it by way of their national utility finally getting it to them, or whether it is provided by a local microgrid or by simply installing solar on their roof. In another part of Tanzania during my trip, I was in a village with no electricity. An NGO was installing small solar panels on each dwelling. The electricity was enough to power one light bulb and charge a cell phone. This meant quite simply that people there were not using kerosene in an enclosed space for light in the evenings, and that they didn't have to walk for miles to a shop or outpost to charge their phone. They said that the panel had changed their life.

What I was also witnessing in that village was an example of the great "leap-frogging" that is happening in the developing world. Getting electricity is not just a question of waiting for the grid to be built out to them. That step is being skipped in the case of off-grid solar, microgrids, etc.

More staggering when one introduces the context of climate change is what energy access means for electricity demand. No more significant example exists than the current and

future penetration of air conditioning in India. In 2011, 95 percent of people in India did not have air conditioning. And two things are rising there: incomes and temperature. You may have seen recently that an area of India had a recorded temperature of 123 degrees. Because of what's happening in India and countries like it, I believe the projections by LBNL that indicate an additional 700 million air conditioners worldwide by 2030.

While in Paris last December for the UN COP-21, I had a chance at a dinner to sit next to the chief negotiator for India. India, as with many countries, wants to do the right thing on climate, but also wants to ensure that its citizens prosper and have the same advantages as the developing world. I also had a lot of people from developing countries come up to me after my presentations at Paris events asking about technologies that would give them more energy access while doing it with a low or non-existent carbon footprint.

I am not saying that everyone should be doing business in developing countries. It is not easy and filled with pitfalls and roadblocks. But it seems like US companies should not take a pass on it without taking a look. There is a need for microgrids, solar, storage and new distribution systems, and there is a need for energy efficient, high-tech appliances and equipment.

I know a lot of technology and service companies are looking at this emerging market, and working with organizations like the US Agency for International Development (USAID) and the World Bank and its financing arm, the International Finance Corporation (IFC). Maybe more companies ought to at least take a look at who these entities are and what they do.

## And what about US utilities?

I began this column by noting how many utilities would like to have growth in demand so that it could lead to revenue growth. But is it crazy for a utility to look at creating new business in other parts of the world by using its sweet spot of expertise in electricity system design, planning and operations? Such a venture would have to be via an unregulated affiliate, of course, but so will many of the other new business ventures that utilities are considering. And why not partner with the same non-utility companies that they work with here, many of which may already be in developing markets?

It is a great big (warming) world out there, and a lot of it has yet to get electricity. If we all do things right, there is an across-the-board win when it comes to how the world is electrified. A win for the world's citizens that don't have electricity now, a win for the countries that work to provide it to them, a win for the companies that provide the technologies and services, and last but certainly not least a win for the climate.

Safe travels as you navigate the path to a new world-wide electricity sector!

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